AIR FORCE REAL PROPERTY AGENCY, FORMER MCCLELLAN AIR FORCE BASE, IN-SITU CHEMICAL OXIDATION TREATABILITY STUDY AT FORMER DAVIS GLOBAL COMMUNICATIONS SITE, Yolo County

The Air Force Real Property Agency (hereafter Discharger) owns and operates a groundwater extraction and treatment system at the Davis Global Communications Site (Davis Site) in Yolo County. The inactive Davis Site was an annex of the former McClellan Air Force Base and is now managed by the Discharger. This system is being utilized to contain and remove numerous chlorinated solvents (primarily tetrachloroethene and trichloroethene) plumes present in the groundwater. The Discharger is evaluating potential alternative technologies that may replace the existing groundwater extraction and treatment system and reduce the time required to reach applicable water quality standards. The project is being conducted as part of a performance-based contract between the Discharger and CH2MHill. CH2MHill will be constructing and operating the treatability study. The Discharger proposes to conduct an in-situ chemical oxidation (ISCO) treatability study to evaluate the potential for in-situ treatment of groundwater containing chlorinated solvents at the Davis Site. The treatability study will involve injection of potassium permanganate into a test cell. The ISCO treatability study will be conducted in two phases. The proposed Waste Discharge Requirements (WDRs) and Monitoring and Reporting Program (MRP) cover the activities for Phase 1 and Phase 2. Phase 2 is expected to follow procedures similar to Phase 1. Specific details of Phase 2 will be developed using the results of Phase 1. Minor changes in the planned activities for Phase 2 may require revisions to the MRP. Significant changes in Phase 2 activities, if necessary, may require revisions to both the Order and MRP. Chemical oxidation has the capability to reduce the contaminant mass in the subsurface in a much shorter timeframe than a pump-and-treat approach. ISCO can permanently degrade VOCs in months, allowing contaminants in the seasonally saturated zone to be treated during the short periods the zone is saturated. The objective of a full-scale ISCO application would be to remediate the residual VOC contamination in the lower aquifer zone and seasonally saturated portion of the uppermost aquifer zone and thereby facilitate the Discharger's goals of property transfer and site closure. Any persistent adverse byproducts created by the treatability study can be captured by the existing groundwater extraction system, if necessary. (JDT)